CBS Corporation

Environmental Remediation
PNC Center
20 Stanwix Street, 10th Floor
Pittsburgh, PA 15222

Via Electronic Mail
August 4, 2016

Ms. Carmen Santos
PCB Coordinator
U.S. Environmental Protection Agency, Region 9 (WST-5)
75 Hawthorne Street
San Francisco, CA 94105

Re: Site-Specific Risk-Based Cleanup Level Calculations, Draft Annotated Outline for Risk-Based PCB Cleanup Plan, and Responses to Comments, Former Westinghouse Apparatus Repair Plant, Rancho Dominguez, California

Dear Ms. Santos:

CBS Corporation (CBS) and its consultant WSP USA Corp. (WSP) have enclosed for your review the following documents pertaining to the former Westinghouse apparatus repair plant in Rancho Dominguez, California:

- A description of the method and assumptions used to derive site-specific risk-based cleanup levels for polychlorinated biphenyls (PCBs) in porous surfaces (Enclosure A);
- Draft annotated outline for the Risk-Based PCB Cleanup Plan (Enclosure B); and
- Responses to the U.S. Environmental Protection Agency comments dated May 18, 2016, regarding post-cleaning sampling (Enclosure C).

If you have any questions regarding this submittal, please do not hesitate to contact me.

Respectfully submitted,

Leo M. Brausch
Consultant/Project Engineer
Environmental Remediation

LMB:

Enclosures

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Enclosure A

Derivation of a Site-Specific Risk-Based Cleanup Level for PCBs in Porous Surfaces

Derivation of a Site-Specific Risk-Based Cleanup Level for PCBs in Porous Surfaces

Overview

On behalf of CBS Corporation (CBS), WSP USA Corp. (WSP) has derived a site-specific risk-based cleanup level (RBCL) for polychlorinated biphenyls (PCBs) detected in porous surfaces (i.e., concrete floors and masonry walls) at the former Westinghouse Electric Corporation (Westinghouse) apparatus repair plant in Rancho Dominguez, California. This site-specific RBCL will be used to make remediation decisions to assure site workers will not incur unacceptable risks from potential current and future exposures to PCBs in building materials. As stated in the U.S. Environmental Protection Agency (EPA), December 5, 2014, letter to CBS, "To meet the Toxic Substances Control Act (TSCA) standard, [the] cleanup must be protective of human health and the environment. EPA applies its acceptable cancer risk range of 10^{-6} to 10^{-4} and a non-cancer hazard quotient of 1 to its cleanup decisions" (Scott 2014). In general, EPA considers excess cancer risks that are below about 1 chance in 1,000,000 (1×10^{-6}) to be so small as to be negligible, and risks above 1 chance in 10,000 (1×10^{-4}) to be sufficiently large that some sort of remediation is desirable. The RBCL discussed below is consistent with this TSCA standard.

Background

In 2015, CBS conducted industrial cleaning of the interior of the former Westinghouse apparatus repair plant to remove PCB-containing dust from building materials. Surfaces that were cleaned were non-porous surfaces (e.g., metal cabinets, doors, sheet metal walls, light fixtures, stairs, railings), porous surfaces (e.g., concrete floors, masonry walls), and floor drains. When completed, every accessible non-porous surface inside the building received some degree of cleaning. After the building cleaning was completed, samples were collected from various media for PCB analysis, including indoor air samples in the vapor and particulate phases, wipe samples from non-porous media, bulk samples from porous media, and bulk dust associated with the heating, ventilation, and air conditioning (HVAC) system.

In an October 15, 2015, letter to EPA, CBS summarized the post-cleaning sample results and included calculated exposure point concentrations (EPCs) of total PCBs in affected media (Brausch 2015). EPCs are estimates of concentrations of chemicals in the environment to which receptors could be exposed. As indicated in CBS's October 15, 2015, letter, the EPC for each affected medium was the 95-percent upper confidence limit of the arithmetic mean, which provides a conservative estimate of the average potential exposure concentration. The EPC calculations for the post-cleaning sample data were segregated into discrete sets by medium (i.e., air, non-porous surfaces, porous surfaces, and HVAC dust) and potential exposure unit. The exposure units for the site were determined based on the spatial distribution of the PCB concentrations relative to potential exposure scenarios for the site. Different vertical and lateral exposure units were considered relevant to plausible exposure scenarios. For example, the vertical accessibility of the wipe sample locations was considered in developing exposure units for the non-porous surfaces. Wipe sample results from non-porous surfaces were divided by high frequency of contact areas (i.e., collected 8 feet or lower from the floor) and low frequency of contact areas (i.e., collected higher than 8 feet from the floor and from ducts, drains, pits, and toe rails).

Different lateral exposure units were assumed for the warehouse floor based on the operational history of the facility. Specifically, a distinction was made between the warehouse floor samples north and south of the grid line N220. Historically, electrical apparatus likely arrived at both the former rail spur (current northeast loading dock) and the ramped entrance in the northwest portion of the facility. Oil-filled equipment entering from the northwest ramp would then be transferred across the northern portion of the building (north of grid line 220) to the transfer (detank) pit to be drained. Under these circumstances, the potential for leakage and tracking of the fluids would have been much greater in the northern portion of the building compared to the southern portion that was used for refurbishing the drained electrical equipment. The warehouse floor data collected to date support this conclusion.

Table 1 summarizes the frequency of detection, the minimum and maximum reported concentrations, and the calculated EPCs for each data set. No EPC was calculated for the air-particulate data set because all reported values were non-detect. Table 1 also includes PCB screening criteria for each affected media in order to identify which medium may require further evaluation and potentially remediation. Indoor air vapor sample results were compared to EPA Regional Screening Level (RSL) for industrial air assuming EPA's acceptable target cancer risk range of 10^{-6} to 10^{-4}. EPA has not developed an RSL for porous surfaces such as concrete. As a conservative measure, bulk sample results for porous surfaces and HVAC dust were compared to the EPA's RSL for industrial soil (assuming a target cancer risk range of 10^{-6} to 10^{-4}). EPA has not developed an RSL for non-porous surfaces, and no surrogate medium in EPA RSL guidance appears appropriate for wipe sample results. Therefore, wipe sample results were compared to the TSCA standard of 10 micrograms per 100 square centimeters (µg/100 cm^2) for unrestricted use of non-porous surfaces as specified in Title 40, Code of Federal Regulations 761.79(b)(3)(i)(A).

Based on a comparison of the post-cleaning sample results to the PCB-screening criteria included in Table 1, PCB concentrations were within EPA's acceptable cancer risk range in post-cleaning samples collected of indoor air-vapor phase, porous surfaces of the building walls, warehouse floor south of grid line N220 and the mezzanine area, and bulk dust from the HVAC system. PCB concentrations in samples from non-porous surfaces in high and low frequency of contact areas met the TSCA standard of 10 µg/100 cm^2. PCBs detected in porous surface samples from the transformer pit floor and walls, northeast loading dock walls, and warehouse floor north of grid line N220 exceeded the PCB screening criterion. On that basis, a site-specific RBCL for PCBs in porous surfaces was derived for planning remediation to assure that site workers will not incur unacceptable risks from potential current and future exposures to PCBs in building materials.

Methodology

The primary guidance used to derive the site-specific RBCL was the EPA "Regional Screening Levels for Chemical Contaminants at Superfund Sites" (EPA 2016a). The EPA RSL guidance does not include screening levels for porous surfaces; however, the methodologies used to derive screening levels for soil may be used as a conservative approach to deriving a cleanup criterion. For the purposes of deriving an RBCL for porous surfaces, it is assumed that PCB-containing dust will be generated from the degradation of concrete floors and walls and, thus, the RBCL will be compared to the PCB concentrations detected in bulk concrete samples to determine if remediation is necessary. As part of the approach to deriving a site-specific RBCL, WSP evaluated the current and anticipated future use of the site, receptor populations potentially exposed to the PCB-containing porous surfaces, and plausible exposure routes.

<u>Site Use</u>

Currently, the site is used by a trucking business. Trucks bring in bulk goods to the site, which are unloaded using forklifts and stored temporarily in the warehouse or outside on the asphalt covered lot. The site is zoned "Restricted Heavy Manufacturing," which prohibits the site's use for residential, some institutions, and schools (Los Angeles County Department of Regional Planning 2009). Based on the site's current use and zoning designation, the reasonable anticipated future land use of the property will be industrial.

Receptor Populations

Based on PCB bulk concrete samples collected at the site, PCBs have been detected in building walls, the warehouse floor, and floors and walls of a loading dock and former transformer pit. Facility workers who work within the warehouse would likely be the current receptor population of PCB-containing building materials. It is not anticipated that any children would be on the site. Given the likely future use of the property for industrial purposes, adult facility workers are considered the future receptor population.

Exposure Routes

Facility workers would potentially be exposed to PCB-containing dust inside the warehouse through direct contact with the floors and walls, and from particulates and vapor that may be released from these surfaces to indoor air. Direct contact would involve inadvertent ingestion (e.g., hand-to-mouth activity associated with smoking or eating) and dermal contact. As indicated previously, PCBs were not detected in the air-particulate data set, and the air-vapor data set was within the EPA acceptable cancer risk range. The inhalation pathway is not considered a significant exposure route for PCBs detected in porous surfaces. Therefore, a site-specific RBCL will be derived that addresses the potential for facility workers to inadvertently ingest and dermally contact PCB-containing dust generated from porous building materials.

Equations and Assumptions to Derive Site-Specific RBCL

The equations and assumptions used to derive the site-specific RBCL for PCBs in porous surfaces are presented in Table 2. The equations are consistent with EPA RSL guidance (EPA 2016a). Under the ingestion exposure route, an 80-kilogram worker is assumed to consume 30 milligrams per day (mg/day) of PCB-containing dust for 250 days per year for 25 years. The assumptions for body weight (BWw), exposure frequency (EFw), and exposure duration (EDw) are EPA standard default values for an adult worker (EPA 2016a). The ingestion rate (IRw) of 30 mg/day of dust is the EPA recommended value for the daily dust ingestion rate for an adult as presented in the EPA Exposure Factors Handbook (EPA 2011). The EPA dust ingestion rate recommendation includes "soil tracked into the indoor setting, indoor settled dust, and air-suspended particulate material that is inhaled and swallowed" (EPA 2011). The oral cancer slope factor (CSFo) assumed in the ingestion exposure route equation is 2 per milligrams of constituent per kilogram of body weight per day $(mg/kg\text{-}day)^{-1}$, which is the PCB toxicity value in the EPA Integrated Risk Information System (IRIS) database (EPA 2016b). EPA's IRIS database only includes a cancer toxicity value for PCBs. A non-cancer toxicity value for PCBs has not been estimated at this time (EPA 2016b). Because PCBs exhibit a carcinogenic effect, the averaging time (ATw) for carcinogenic exposures is equal to a lifetime in years (70 years) multiplied by 365 days per year, which is 25,550 days. The target cancer risk (TR) was assumed to be 10^{-5}, which was selected because it is within EPA's acceptable cancer risk range of 10^{-6} to 10^{-4}.

For the dermal exposure route, an adult worker is assumed to wear a short-sleeved shirt, long pants, and shoes. The skin surface area available for contact (SAw) was assumed as 3,527 cm^2 per day, which is an EPA standard default value and represents exposure to the face, forearms, and hands of an adult worker (EPA 2016a). The dust adherence factor (AFw) was 0.12 mg/cm^2, which is an EPA standard default value for an adult commercial/industrial worker exposed to soil (EPA 2016a). The fraction of a contaminant absorbed dermally (ABSd) is chemical-specific. The ABSd value for PCBs in dust was assumed to be 0.14, which is the default value for soil presented in EPA's Risk Assessment Guidance (RAGS) Part E, Supplemental Guidance for Dermal Risk Assessment (EPA 2004). The values for EFw, EDw, BWw, ATw, and TR for the dermal exposure route were the same as those for the ingestion exposure route. There is no dermal toxicity value available for PCBs; therefore, consistent with EPA guidance, the oral toxicity value (CSFo) was assumed.

Using the equations and assumptions presented in Table 2 and discussed above, the site-specific RBCL for PCBs in porous surfaces was calculated to be 18 mg/kg. The procedures and inputs used to derive this RBCL are subject to a variety of uncertainties. For example, exposure estimates in many cases are highly dependent on the exposure frequency, exposure duration, and other exposure assumptions. Consistent with EPA guidance, the exposure parameters that were selected ensure that potential exposure was not underestimated. Actual exposure could be considerably less than EPA's standard default estimates. To ensure that human health at the former Westinghouse apparatus repair plant is adequately protected, the methodology used to derive this site-specific RBCL for PCBs in porous surfaces incorporates conservative (unlikely to underestimate risk) approaches and uncertainty factors.

References

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U.S. Environmental Protection Agency. 2004. Risk Assessment Guidance for Superfund: Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. Office of Superfund Remediation and Technology Innovation, Washington, D.C. EPA/540/R/99/005. OSWER 9285.7-02EP. July.

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U.S. Environmental Protection Agency. 2016a. Regional Screening Levels for Chemical Contaminants at Superfund Sites. https://www.epa.gov/risk/regional-screening-levels-rsls. Accessed on June 27, 2016.

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Table 1

Exposure Point Concentrations for PCBs in Various Sample Media After Final Cleaning
Former Westinghouse Apparatus Repair Facility
Rancho Dominguez, California (a)

Sample Medium and Exposure Unit	Frequency of Detection (b)	Total PCBs (c)			Screening Criteria
		Minimum Detected	Maximum Detected	Exposure Point Concentration (d)	
Indoor Air Samples (µg/m^3) (e)	5/6	0.043	0.098	0.088	0.021 - 2.1 (i)
Wipe Samples from Non-porous Media (µg/100 cm^2)					
High Frequency of Contact Areas (f)	5/29	0.78	2.2	1.2	10 (j)
Low Frequency of Contact Areas (g)	46/114	0.51	5.7	1.4	
Bulk Samples from Porous Media (mg/kg)					
Transformer Pit Floor and Walls and Northeast Loading Dock Walls	13/13	2.2	4,500	1,800	0.94 - 94 (k)
Building Walls, Including Office, Break Room, and Loading Docks	63/63	0.078	51	2.4	
Warehouse Floor North of Grid Line N220	51/51	0.39	210	46	
Warehouse Floor South of Grid Line N220 and Mezzanine Area	127/127	0.072	130	8.5	
Bulk Dust Samples from HVAC System in Western Office Area (mg/kg)	2/2	3.76	3.9	3.9 (h)	0.94 - 94 (k)

a/ PCBs = polychlorinated biphenyls; µg/m^3 = micrograms per cubic meter; µg/100 cm^2 = micrograms per 100 square centimeters; mg/kg = milligrams per kilogram.

b/ Sample locations with duplicate samples were counted once.

c/ Total PCBs are the sum of detected individual Aroclor concentrations. Aroclors not detected (i.e., flagged "U") are assumed to not contribute to the total PCB concentration.

d/ Exposure point concentration (EPC) is the 95% upper confidence limit (UCL) calculated using U.S. Environmental Protection Agency's (EPA's) Statistical Software ProUCL 5.0.00 for Environmental Applications for Data Sets with and without Nondetect Observations, dated September 2013, assuming the following:

- If a duplicate sample was collected at a sample location, the higher of the two concentrations was assumed to calculate the UCL.
- If more than one UCL was recommended using ProUCL, the higher of the UCLs was assumed as the EPC.
- ProUCL provides EPC estimation methods for left-censored data sets consisting of nondetect observations.

e/ Air sample results include only PCBs detected in vapor samples because no PCBs were detected in particulate samples.

f/ High frequency of contact areas are wipe sample locations collected 8 feet or lower from the floor (excluding samples collected from ducts, drains, toe rails, and pits), and as a conservative measure, including wipe sample locations where the height above floor was not specified in the field (i.e., "unknown").

g/ Low frequency of contact areas are wipe sample locations collected higher than 8 feet from the floor and including samples collected from ducts, drains, pits, and toe rails.

h/ Too few samples collected to calculate UCL; therefore, the maximum concentration detected was assumed as the EPC.

i/ Screening criteria for indoor air is the EPA Regional Screening Level (RSL) for industrial air assuming an acceptable cancer risk range of 10^{-6} to 10^{-4} (EPA 2016a).

j/ Screening criterion for non-porous media is the standard for unrestricted use of nonporous surfaces as specified in Title 40 Code of Federal Regulations 761.79(b)(3)(i)(A).

k/ Screening criteria for bulk samples from porous media and bulk dust samples is the EPA RSL for industrial soil assuming a cancer risk range of 10^{-6} to 10^{-4} (EPA 2016a).

Table 2

Equations and Assumptions to Derive Site-Specific RBCL for PCBs in Porous Surfaces
Former Westinghouse Apparatus Repair Facility
Rancho Dominguez, California (a)

Exposure Route	Equation	RBCL Calculation (mg/kg)
Ingestion	RBCL-ing = $\frac{TR \times ATw \times BWw}{EFw \times EDw \times CSFo \times IRw \times (10^{-6}\ kg/1\ mg)}$	RBCL-ing = 55
Dermal	RBCL-der = $\frac{TR \times ATw \times BWw}{EFw \times EDw \times CSFo \times SAw \times AFw \times ABSd \times (10^{-6}\ kg/1\ mg)}$	RBCL-der = 28
Total	RBCL-ing+der = $\frac{1}{(1/RBCL\text{-}ing) + 1(1/RBCL\text{-}der)}$	RBCL-ing+der = 18

a/ PCBs = polychlorinated biphenyls; RBCL = risk-based cleanup level; mg/kg = milligrams per kilogram.
RBCL-ing = risk-based cleanup level for porous surfaces assuming the ingestion exposure route
RBCL-der = risk-based cleanup level for porous surfaces assuming the dermal exposure route
RBCL-total = risk-based cleanup level for porous surfaces assuming the ingestion and dermal exposure routes combined
TR = target cancer risk (unitless) = 10^{-5}
ATw = averaging time for an adult facility worker = lifetime (70 years) x 365 days/year = 25,550 days
BWw = body weight for an adult facility worker = 80 kg
EFw = exposure frequency for an adult facility worker = 250 days/year
EDw = exposure duration for an adult facility worker = 25 years
CSFo = chronic oral cancer slope factor for PCBs = 2 $(mg/kg\text{-}day)^{-1}$
IRw = ingestion rate of dust for an adult worker = 30 mg/day
SAw = skin surface area available for contact for an adult facility worker = 3,527 square centimeters (cm^2) per day
AFw = dust adherence factor for an adult facility worker = 0.12 mg/cm^2
ABSd = fraction of PCBs absorbed dermally from dust (unitless) = 0.14

Enclosure B
Draft Annotated Outline of Risk-Based PCB Cleanup Plan

Risk-Based PCB Cleanup Plan

(DRAFT Annotated Outline)

Former Westinghouse Apparatus Repair Facility – Rancho Dominguez, California

August 4, 2016

WSP | PARSONS BRINCKERHOFF

United States Coast Guard Headquarters ©Judy Davis/Hoachlander Davis Photography

Risk-Based PCB Cleanup Plan

(DRAFT Annotated Outline)

Former Westinghouse Apparatus Repair Facility

Rancho Dominguez, California

August 4, 2016

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Certification Statement

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (19 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Signature of Party Conducting the Cleanup

Name and Title

Date

Signature

Signature of Property Owner

Name and Title

Date

Signature

1 Introduction

- Identify parties, roles, and responsibilities
- Acknowledge existing agreement between CBS and property owner
- Introduce risk-based cleanup approach
- Describe organization of plan

1.1 Regulatory Background

- Reference 40 CFR Part 761, specifically Section 761.61(c) for risk-based cleanup
- Describe regulatory framework

1.2 Cleanup Plan Objectives

- Establish and define exposure units and exposure point concentrations
- Evaluate human health risks to establish appropriate action levels for each exposure unit
- Evaluate potential remedial alternatives to meet the established goals

2 Site Background

2.1 Site History

- Describe current and historical site ownership, land use, and operations

2.2 Site Description

- Describe site location, building construction, office and warehousing areas, adjacent properties, surface features, and drainage

2.3 Previous Investigations and Removal Actions

- List and describe historical investigations and remedial activities conducted by WSP, previous owners, and other consultants.

3 Building Cleaning and Sampling Activities

- Describe rationale for site-wide cleaning
- Objective – mass removal of PCBs to mitigate immediate (actual or perceived) threat to human health
- Reference Building Cleaning Work Plan

3.1 Pre-Cleaning Activities

3.1.1 Health and Safety Plan and Procedures

- Describe air monitoring, PPE, work zones, high-lift equipment, training

3.1.2 Transformer and Storage Tank Removal

- Asbestos abatement
- Fluids recovery, sampling, disposal
- Tank and transformer cleaning, wipe sampling, scrap disposition

3.2 Baseline Air Sampling

Pre-cleaning air sampling conducted before intrusive cleaning activities:

- Sampling equipment and procedures
- Collection and analyses of particulates (quartz filter) and vapors (PUF filter)
- QC sampling
- Laboratory analyses
- Reference sections for interim sampling events (during cleaning) and final sampling event
- Use of baseline data for safety planning purposes

3.3 Building Cleaning

General description of cleaning activities and sequencing:

- Top to bottom approach
- Work zone establishment and controls, temporary relocation of stored goods
- Surfaces with paints or coatings
- Every exposed surface received some degree of cleaning

3.3.1 Non-Porous Surfaces Cleaning

- Surfaces cleaned – steel columns, structural members, grates, ducts, and pipes; stairs and railings; electrical boxes, conduit, light fixtures; cranes, crane rails, and other equipment, metal ceilings, walls, and doors; glass; etc.
- Cleaning procedures – HEPA vacuum, Simple Green™ surfactant solution wipe, clean cloth wipe
- Re-cleaning after confirmation sampling – oily/greasy crane rails

3.3.2 Porous Surfaces Cleaning

- Surfaces Cleaned – concrete floors, pits, and walls; masonry walls
- Disposal in lieu of cleaning – cardboard storage boxes
- Cleaning procedures – HEPA vacuum, Simple Green™ surfactant solution scrub, rinse, sorbent, final vacuum

3.3.3 Floor Drains Cleaning

- Describe locations, reference drawing
- Most drains were found sealed or capped
- Cleaning procedures – grate/cap removal, scraping, Simple Green™ surfactant, sorbent, final vacuum.

3.3.4 Waste Management

- Bulk PCB remediation waste – used rags, vacuum residuals, sorbent, used PPE – assumed to contain PCBs at a concentration greater than 50 mg/kg
- Approximately 5 gallons of liquids from storage tank and piping absorbed and disposed as a solid
- Roll-off box storage and security
- Transportation and disposal – three loads to U.S. Ecology in Beatty, Nevada
- Reference appendix for profile, manifests, and disposal documentation

3.4 Sampling and Analysis

- Describe sampling approach to assess efficacy of cleaning
- No numerical goals to demonstrate attainment of any standard

3.4.1 Air Sampling

Four rounds of air sampling for vapor and particulates – one baseline event, two interim events, and one final event (reference Section 3.2 for procedures)

- Baseline event performed before any cleaning or intrusive activities
- Two interim cleaning events to document conditions inside the active cleaning areas (protection of cleaning personnel) and outside the active cleaning areas (protection of warehouse personnel)
- Final event representative of post-cleaning conditions – data from final event is most representative of future conditions and therefore used in human health risk evaluation

3.4.2 Wipe Sampling of Non-Porous Surfaces

Approximately 160 wipe samples collected to assess the efficacy of cleaning

- Describe surfaces cleaned and sampled
- Describe wipe sample location selection and sampling procedures
- Describe conditions that prompted re-cleaning and re-sampling – greasy crane rails, elevated wipe sample results

3.4.3 Bulk Sampling of Porous Surfaces

- Describe and introduce the types of bulk samples – dust, concrete, masonry – associated with floors, walls, pits, HVAC systems

3.4.3.1 Bulk Dust

- Primarily pre-cleaning samples collected for health and safety planning purposes
- Describe sampling procedures

3.4.3.2 Floors

- Primarily post-cleaning samples of the concrete floors
- Describe grid overlay and sampling procedures

3.4.3.3 Walls

- Primarily post-cleaning samples of the concrete and masonry walls
- Describe sampling procedures

3.4.3.4 Dusts Associated with HVAC Systems

- Combination of pre-cleaning bulk and wipe samples and post-cleaning wipe samples
- Describe procedures

3.4.4 Equipment Decontamination

- Describe procedures

3.4.5 Quality Control Sampling

- Describe duplicates and rinsate samples

3.4.6 Sample Handling

- Describe labeling, nomenclature, preservation, shipping/couriers, chain of custody, holding times, etc.

4 Sampling Results and Risk Evaluation

4.1 Exposure Units

- Describe the rationale for dividing up the site into exposure units – media type, historical uses, potential for future exposure

4.2 Exposure Point Concentrations

- Reiterate procedures and 95-percent upper confidence limit (UCL) calculations for EPCs from CBS' October 30, 2015, letter to EPA
- Summarize sample results and EPC calculations, assumptions, and results for each of the following exposure units (reference tables and calculations in appendix):

4.2.1 Indoor Air Samples

4.2.2 Wipe Samples

4.2.2.1 High Frequency Contact Surfaces

4.2.2.2 Low Frequency Contact Surfaces

4.2.3 Bulk Samples

4.2.3.1 Transformer Pit and Northeast Loading Dock Walls

4.2.3.2 Building Walls

4.2.3.3 Concrete Floors North of Gridline N220

4.2.3.4 Concrete Floors South of Gridline N220

4.2.3.5 Dusts Associated with HVAC Systems

4.3 Risk-Based Cleanup Levels

- Describe comparisons to default screening criteria for air, porous surfaces, non-porous surfaces, and dust
- Only bulk concrete sample results exceed screening criteria for 10^{-6} to 10^{-4} acceptable cancer risk range
- Describe calculations for site-specific risk-based cleanup level (RBCL) for concrete that corresponds to a target cancer risk of 10^{-5} – 18 mg/kg.
- Define hot spot concrete concentration as the 10^{-4} risk level – 180 mg/kg.

4.4 Cleanup Plan Objectives

- Remove concrete floor slab where PCB concentrations exceed the RBCL until the resulting UCL in the exposure unit is less than the RBCL and no single sample result is greater than a hot spot concentration of 180 mg/kg
- Confirm through sampling that the concrete adjacent to the removed slabs meet the RBCL
- Apply encapsulant or install permanent barrier for concrete walls that exceed the RBCL of 18 mg/kg

- Consolidate concrete containing PCBs less than 50 mg/kg into the transformer pit and construct a 6-inch (minimum) thick concrete cap meeting the requirements of 40 CFR 761.61(a)(7).
- Transport concrete containing PCB concentrations greater than 50 mg/kg to an appropriately permitted TSCA/hazardous waste disposal facility.
- Replace concrete slab where concrete was removed.

5 Remediation Alternatives Analysis

- Brief introduction to potential remedial options to meet the project objectives
- Describe differences between abatement and mitigation

5.1 Abatement Techniques

- Describe the technology, protectiveness, effectiveness, implementability, limitations and future uses, cost ranges for each of the abatement techniques below

5.1.1.1 Sand/Shot Blasting

5.1.1.2 Pressure Washing

5.1.1.3 Scarification/Scabbling

5.1.1.4 Grinding

5.1.1.5 Slab Removal

5.1.1.6 Dechlorination

5.1.1.7 Organic Solvent Extraction

5.2 Mitigation Techniques

- Describe the technology, protectiveness, effectiveness, implementability, limitations on future uses, cost ranges for each of the mitigation techniques below

5.2.1 Encapsulation

5.2.2 Capping

5.2.3 Ventilation/Filtration

5.2.4 Administrative Controls

5.2.4.1 Work Practice Controls (Best Management Practices)

5.2.4.2 Deed Restriction

6 Description of Selected Remedy

Describe how selected remedy will meet the RBCL and project objectives

6.1 Transformer Pit

- The EPC for the transformer pit floor and walls exceeds the RBCL
- Abatement is not practical due to depths and structural constraints
- Remedy will include consolidating materials containing less than 50 mg/kg PCBs, removing the uppermost portions of the walls and placing the concrete in the pit, backfilling the remainder of the pit to subgrade (approximately 12 inches beneath the warehouse floor) with clean imported soils, placing concrete subase and constructing a concrete cap meeting the requirements of 40 CFR 761.61(a)(7), and placing a deed restriction of this portion of the facility

6.2 Northeast Loading Dock Walls

- The EPC for the northeast loading dock walls exceeded the RBCL. The floor of the northeast loading dock was replaced in 2009 and does not contain PCBs above the RBCL
- Remedy for the loading dock walls will include encapsulation with a two-part epoxy coating of contrasting colors or installation of a permanent solid barrier.

6.3 Concrete Floors

6.3.1 South of Grid Line N220

- The EPC for the concrete floors south of gridline N220 did not exceed the RBCL, and no single sample exceeded the defined hot spot concentration of 180 mg/kg. No action is required.

6.3.2 North of Grid Line N220

- The EPC for the concrete floors north of gridline N220 exceeded the RBCL.
- Remedy will involve sequential removal of concrete with the highest PCB concentrations until the 95 percent UCL calculation shows that the UCL meets the RBCL provided that no single sample result exceeds the hot spot concentration of 180 mg/kg.
- Removal of the entire thickness of concrete is planned following replacement with a new slab. Removed concrete that contains less than 50 mg/kg PCBs will be consolidated in the transformer pit to be capped. The remaining concrete over 50 mg/kg will shipped offsite as a TSCA/hazardous waste.
- Confirmation samples will be collected at four locations around each hot spot removal. The resulting data will be input to the UCL calculation.

6.4 Building Walls

- The EPC for the concrete/masonry walls including the two interior structures did not exceed the 18 mg/kg RBCL, and no single sample exceeded the hot spot concentration of 180 mg/kg. No action is required.

6.5 Non-Porous Surfaces

- The EPC for both low- and high-frequency contact surfaces did not exceed the 10 μg/100 cm^2 cleanup level described in 761.79(b)(3)(i)(A). No action is required.

6.6 HVAC Systems

- The EPC for bulk dust (defined as the maximum of the two samples collected) did not exceed the screening criteria. No action is required based of the existing data; however, CBS will consider cleaning or replacing the existing duct work to minimize potential future exposures.

6.7 Sequence of Work

Describe general sequence of remediation:

1. Duct cleaning (if performed)
2. Concrete floor removal
3. Consolidation in the transformer pit
4. Cap construction
5. Encapsulation.

7 PCB Cleanup Plan

This section will be revised as necessary and annotated upon concurrence with Cleanup Plan objectives, EPC and RBCL calculations, and the selected remedy

7.1 Additional Characterization

7.2 Permitting and Notification Requirements

7.3 Health and Safety

7.3.1 Air Monitoring

7.3.2 Dust Control

7.4 Site Preparation

7.4.1 Utility Protection

7.4.2 Staging Areas

7.4.3 Security

7.5 Concrete Removal

7.5.1 Limits of Removal

7.5.2 Saw-Cutting

7.5.3 Confirmation Sampling

7.5.4 Restoration

7.5.5 PCB Remediation Waste Handling

7.5.5.1 Temporary Storage

7.5.5.2 Consolidation for Capping

7.5.5.3 Waste Characterization and Profiling

7.5.5.4 Transportation and Disposal

7.6 Capping

7.6.1 Cap Design

7.6.2 Filling and Grading

7.6.3 Cap Construction

7.6.4 Inspections, Operation and Maintenance

7.6.5 Deed Restriction

7.7 Encapsulation

7.7.1 Surface Preparation

7.7.2 Products and Application

7.7.3 Operation and Maintenance

7.8 Floor Drain Plugging

7.9 HVAC Systems

8 Documentation and Reporting

8.1 Field Reports

8.2 Photographs

8.3 Transportation and Disposal Records

8.4 Final Report

8.5 Institutional Controls

9 Cleanup Plan Schedule

10 References

Figures

Tables

Appendix A – [Name]

Appendix B – [Name]

Appendix C – [Name]

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Enclosure C - Response to EPA's Comments from May 18, 2016

CBS Post Cleaning Sampling – Former Westinghouse Facility, Rancho Dominguez, CA

EPA R9 Comments – May 18, 2016

1. Indoor air sampling

a. Next steps: Conduct air sampling after the PCB cleanup inside the building is completed provided that best management practices (BMPs) are implemented on a routine basis. These BMPs include continued cleaning of building surfaces and wipe samples.

CBS does not believe additional indoor air sampling is warranted. While low levels of PCBs in air particulate were present in pre-cleaning air samples, the post-cleaning samples (final event) did not contain any detectable concentrations of PCBs in the particulate after the thorough HEPA vacuuming and surfactant cleaning/wiping of all exposed surfaces of the building interior. Only Aroclor 1242 was detected in the vapor-phase PCB analyses, which is not consistent with the Aroclor 1260 that was predominantly identified in bulk and wipe samples.

2. Concrete floor sampling – bulk samples

a. Concrete is a very heterogeneous surface and these heterogeneity should be considered in the cleanup approach for this surface.

CBS disagrees that concrete is heterogeneous. The batch mixing of cement, aggregate, and water results in an inherently homogeneous material.

b. The current and potential future use of the Building interior must also be considered when developing the cleanup plan for the concrete. Will the interior of the building be subdivided in distinct areas (that we may consider as exposure units) in the future? If so, what would be the size of the exposure units? Is the current and potential future use of the building going to remain as a warehouse? Does the current use includes offices? If the current use of the building changes in the future, will that use include offices or other non-industrial activity?

Hager Pacific confirmed in the June 2, 2016, teleconference, which included EPA, CBS, and WSP, that the use of the facility will remain as warehousing for the foreseeable future (at least the next 3 to 5 years) with no plans for subdividing the warehouse space into smaller "exposure units." The current use includes offices on the western part of the site and in the southernmost interior structure below the mezzanine level. Both office areas are currently vacant except for dispatch and safety personnel associated with the tenant's warehousing operations. For the purposes of the cleanup plan, CBS will assume that the current configuration of offices will remain.

c. Subdivision of the concrete floor into quarters for cleanup is recommended given the size of the floor, heterogeneity of the concrete, and spatial distribution of PCB contamination on the floor. Therefore, we recommend the use of the N150 line as the starting point for cleanup of PCBs on the concrete floor due to the heterogeneous distribution of PCBs on the concrete surface. CBS had divided the floor into two sections above and below N220.

CBS disagrees that the subdivision into quarters or quadrants is of any significance for past, current, or future industrial uses of the facility. CBS's knowledge of historical operations at similar electrical equipment repair facilities suggests that electrical equipment received at the facility would be offloaded to the detank pit for draining and flushing of dielectric fluids before being refurbished and retrofilled for reuse. At the Rancho Dominguez facility, equipment received by rail would have been offloaded at the rail dock adjacent to the detank pit in the northeast portion of the facility. Equipment received by truck would have arrived at the truck entrance, then transferred across the northern portion of the building to the detank pit. The flushed, PCB-free equipment would have been repaired, refurbished, and shipped out in the southern portions of the facility.

3. Concrete walls – bulk samples

a. Some additional samples may be requested. We can discuss during a conference call.

CBS does not believe additional bulk samples of walls are necessary. Bulk concrete/masonry wall samples were collected at approximately the same rate as the floor samples, 1 sample per 400 square feet, with samples collected at variable heights above the working surface.

4. Stairwell to mezzanine level

Is the stairwell made of metal?

Both stairwells leading to the mezzanine levels of the interior structures are made of metal. The stairwell surfaces (treads, railings, toe rails) were managed as non-porous surfaces and cleaned using the procedures described in the Building Cleaning Work Plan.

5. Surface wipe samples

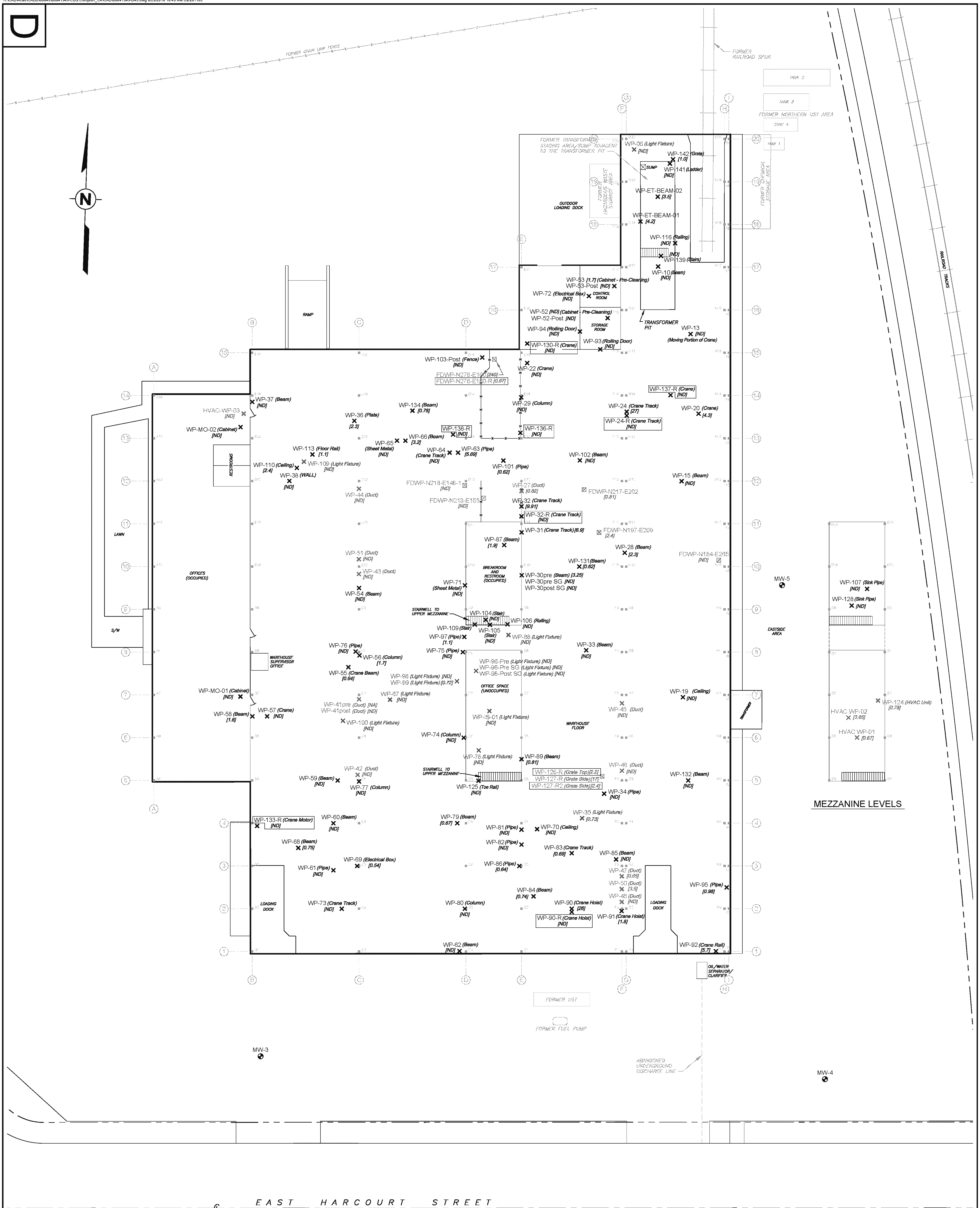
a. We would like to further evaluate this data and need additional figures. Please provide a figure that properly identifies each of the wipe samples collected (1) after cleaning and (2) after re-cleaning.

The samples of the re-cleaned surfaces are identified by the letter "R" at the end of the sample identification shown on both the figures and tables. On the revised wipe sample figure (enclosed), sampled identifications are boxed to denote a "re-cleaned" sample.

Notably, most of the surfaces that were re-cleaned are associated with the crane and crane rails that were found to contain oil and grease that were not easily removed using the Simple Green™ solution. The greasy equipment was re-cleaned using undiluted solution and more aggressive scrubbing techniques.

R:\CAD\Acad\CADD\00040\00041949-CBS.Compton_CA\CAD\00041949-D45.dwg 6/29/2016 10:49 AM Usrz01165

D



THE ORIGINAL VERSION OF THIS DRAWING IS IN COLOR. BLACK & WHITE REPRODUCTION MAY NOT ACCURATELY DEPICT CERTAIN INFORMATION.

20 10 0 20 40
SCALE, FEET

LEGEND

MW-4	MONITORING WELL
	PROPERTY LINE
	ROADWAY CENTER LINE
	BUILDING COLUMN AND NUMBER
	INTERIOR FENCE/WALL
WP-02 ×	WIPE SAMPLE
FDWP	POST CLEANING FLOOR DRAIN WIPE SAMPLE
[2.8]	PCB CONCENTRATION IN $\mu g/100\ cm^2$
WP-90-R ×	BOXED SAMPLE ID INDICATES FEATURE WAS RE-CLEANED AND RE-SAMPLED
[ND]	NOT DETECTED
[NA]	NOT ANALYZED

NOTES:

1. SAMPLE LOCATIONS ARE APPROXIMATE
2. PRE-CLEANING AND POST-CLEANING SAMPLES WERE COLLECTED AT CERTAIN LOCATIONS TO EVALUATE THE EFFECTIVENESS OF THE CLEANING PROCEDURE.

REFERENCE:
GOOGLE EARTH AERIAL PHOTOGRAPH, IMAGERY DATE MARCH 7, 2011.

Drawing Number 00041949-D45

FIGURE 3

WSP | PARSONS BRINCKERHOFF

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WIPE SAMPLING LOCATIONS AND RESULTS

FORMER WESTINGHOUSE EQUIPMENT REPAIR FACILITY
RANCHO DOMINGUEZ, CALIFORNIA

PREPARED FOR
CBS CORPORATION
PITTSBURGH, PENNSYLVANIA

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DATE

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REVISIONS

REV	DESCRIPTION		
1	Revised:	Chkd:	Appr.:
2	Revised:	Chkd:	Appr.:
3	Revised:	Chkd:	Appr.: